

# Data Warehousing Defined

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The use of data to make informed decisions is one of the most commonly mentioned initiatives in schools today. With No Child Left Behind, and Education YES!, now more than ever, schools are turning to data to justify programs and identify intentional areas of school improvement efforts.

There are many tools that school districts are using across the country that are data mining tools. While they are great data collection tools, and may give some relevant and meaningful reports, they are not all 'data warehouses.'

What are some data mining tools?

## *Assessments*

Many schools are giving assessments to students in order to help identify curricular deficiencies. These are great data tools, some of which are predictors to MEAP performance and grade level content expectation mastery. However, most of these tools do not contain data from other sources beyond student demographics, such as teacher demographics or special program involvement (such as after school activities) and their impact on student achievement.

## *Student Information Systems*

All schools have some sort of student information system for the purposes of grades, attendance, report cards, transcripts, etc. Some of the more sophisticated packages allow for assessment results to be stored and reports generated. However, these packages were not designed to link data from multiple years with assessment and special program data, or even teacher data. Some systems do have portions of these reporting tools, but not all data is necessarily easy to incorporate or access.

## *Document Storage*

Human resource and finance departments think of a data warehouse as the ability to digitize years of personnel records, purchase order information, requisitions, etc. While this is also a very valuable data mining tool, there is no association to student, teacher and assessment data in order to identify areas to target for school improvement.

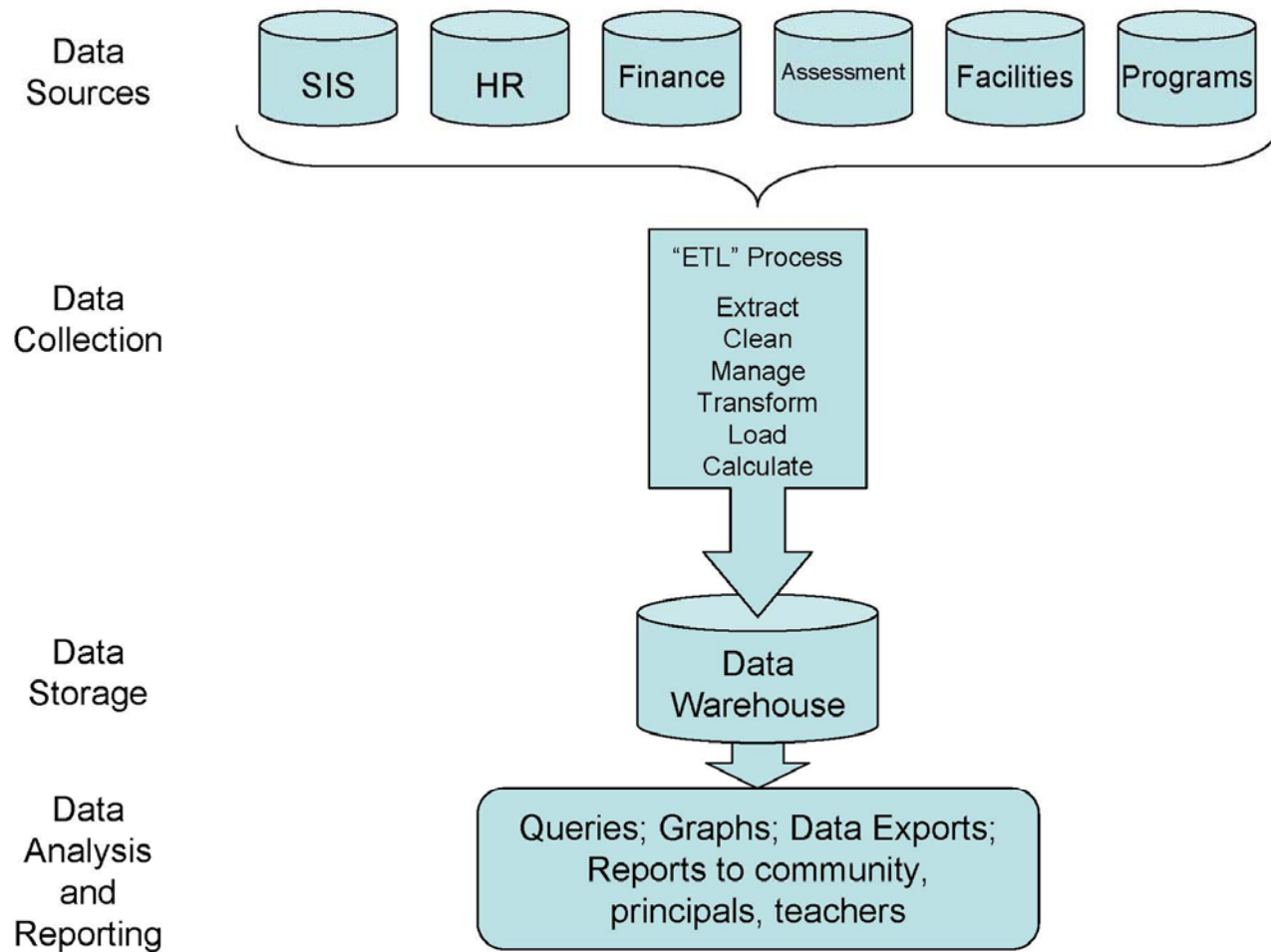
## *What is data warehousing?*

- A tool to help districts become data driven in order to meet the requirements of NCLB and EdYES!
- A collection of various sets of data found in a variety of unrelated locations and formats brought into one relational database.
- It will allow districts to find answers and ask complex questions that uncover underlying problems - leading to the design of data driven student achievement and school improvement strategies.
- Data incorporated into a fully relational data warehouse includes:
  - Financial data
  - Personnel data
  - Building infrastructure data
  - Student demographic data
  - Student achievement data
  - Assessment data

On the following page is a graphical representation of a data warehouse.

Used correctly, a data warehouse will become an essential tool in the school improvement planning process.





Note the various data sources listed at the top. Many great data mining tools start with one or two of these data sources and flow through the process, resulting in meaningful reporting tools.

However, a fully relational data warehouse will use all the data sources listed at the top in order to fully inform the school district where school improvement efforts need to be focused.

*"Data Warehousing Defined" is written by the Technology Committee of the Michigan Association of Intermediate School Administrators, August 2005*